ABSTRACT OF THE DISCLOSURE

An exciting coil is constructed by winding a winding in a groove formed on the outer circumference of a circular ring member, and a detecting coil in the shape of a polygon (such as a triangle and a pentagon) when seen from the front is positioned. One side of the detecting coil is placed in a diameter direction of the exciting coil, inside the exciting coil, and the vertex opposite to the one side is placed apart from the exciting coil so that the detecting coil is orthogonal to the exciting coil. A side surface of the exciting coil on the side opposite to the vertex is placed to face the surface of a test material, and used as a flaw detection surface.